

LAKE LANIER NON-POINT SOURCE IMPROVEMENT PROJECT

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Abstract. The Upper Chattahoochee Basin Group (UCBG) is a coalition of local governments and private groups surrounding Lake Lanier (please see figure 1). Based on a study of the lake and watershed completed in 1998 (UCBG 1998), several tributaries were identified as having non-point source pollution problems including high turbidity, phosphorus, and fecal coliform. In response, the UCBG devised a series of demonstration projects and outreach efforts to reduce pollutant loadings from a variety of identified sources including urban runoff, agriculture, leaking septic tanks, and new development. Local governments, private donations, and a USEPA Clean Water Act section 319(h) grant provided funds for the project.

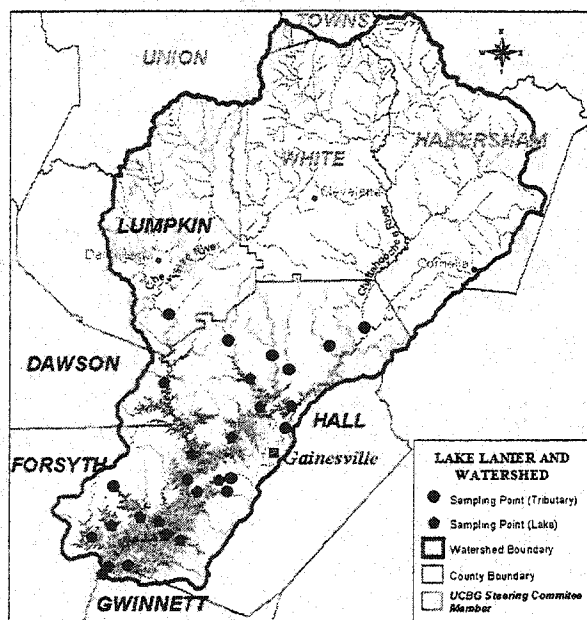


Figure 1. Lake Lanier Watershed and Steering Committee Members

INTRODUCTION

Situated in one of the nation's fastest growing regions, Lake Lanier and its tributaries are the primary source of drinking water for millions of people in North Georgia, including most residents of metro Atlanta. Water resource and water quality issues such as drinking water supply, levels of wastewater discharge, the impact of rapid development, public health and wildlife protection have demanded increasing attention from area residents and local governments. This project begins the process of addressing nonpoint source pollution from various land uses. Unless action is taken, water quality is predicted to decline in the lake which will negatively impact a host of environmental and economic issues.

PROJECT DESCRIPTION:

The project is comprehensive in addressing several watersheds found to have non-point source pollution. More importantly, various sources of pollution are targeted including established urban areas, new development, agriculture runoff as well as homeowners and school groups. A brief description of each project element follows:

Rock Creek Stormwater Mitigation

Working with Friends of the Parks, potential stormwater control alternatives were analyzed for the top section of Ivey Terrace Park. A detention pond has been built to reduce velocity of the stream. Erosion has decreased downstream. Wetland plants will be installed soon to enhance the sediment and nutrient removal.

Limestone Creek Stormwater Treatment

Working with the City of Gainesville Public Works Department and Lanier Park Hospital, a "Stormceptor" will be installed on in a parking lot to treat stormwater

runoff. This new technology will be monitored for effectiveness for 1 year.

West Fork of the Little River Streambank Restoration

Working with the Natural Resource Conservation Service, approximately 200 feet of collapsing streambank has been stabilized using cost-effective techniques. The landowner was losing approximately 5 linear feet of property each year due to erosion. The streambank was now more than 8 feet high from the streambank and now has a gently graded slope and a series of trees and branches secured to the bank to trap sediments and re-build the streambank.

West Fork of the Little River Agriculture BMPs

Poultry and cattle best management practices (BMPs) have been implemented in this watershed to reduce nutrient and bacterial loadings to Lake Lanier. A poultry litter stackhouse was built to store waste material and allow application of this natural fertilizer when weather and soils permit. Cattle have been fenced out of a small tributary leading to the West Fork of the Little River, reducing sediment and fecal coliform bacteria entering waterways.

West Fork of the Little River Adopt-A-Stream

A water quality testing program for students and teachers has been started at three schools in this watershed. The project has coordinated training, recruited schools, and offered technical advice to the Adopt-A-Stream groups.

Nicklaus Birch River Golf Course Stormwater Control and Wetland Creation

Several depressions were created at the Nicklaus Birch River Golf Course to contain stormwater runoff. These depressions have no outlet. Both overland flow and a stormwater conveyance system contribute to the depressions. Wetland plants were added to these systems to enhance treatment, aesthetics, and wildlife habitat.

Septic Tank Brochure Development and Distribution

A brochure describing the operation and maintenance of septic systems, as well as the potential impact on water quality was developed and distributed to lakeshore residents in Forsyth and Gwinnett Counties.

What Next?

One final BMP will be implemented in the next few months (infiltration trenches in a new development parking lot). At that time, a year-long water quality monitoring effort will begin to document effectiveness of the various practices. Field days will be held to share with others how the techniques were implemented, water quality results, costs, and areas that could be improved.

CONCLUSIONS

A comprehensive approach to watershed protection is needed to address the variety of nonpoint source pollution issues that many communities face. The combination of structural and educational approaches taken in the Lake Lanier Nonpoint Source Improvement Project will ultimately show that improvement can be made when sources are targeted, partners are utilized, and results monitored. These technologies are somewhat new but may soon become the standard as water quality continues to be addressed.

ACKNOWLEDGMENTS

A USEPA Clean Water Act, Section 319, grant was utilized to help support these efforts.

REFERENCES

1998 Application of Linked Watershed and Water Quality Models for Lake Lanier. Limno-Tech and Brown and Caldwell for Upper Chattahoochee Basin Group.